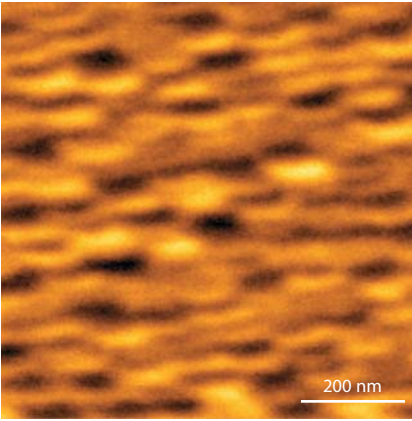


High resolution long lifetime magnetic probes



The choice of the proper probe is very important during magnetic measurements. The magnetic probe should provide high resolution images. Besides it should “survive” under high-humidity conditions.

NT-MDT offers new development - high resolution long lifetime magnetic probes **MFM01** and **MFM10**. Special protective layers help to avoid oxidation and increase the cantilever lifetime substantially. Sharp silicon tip with coating less than 40 nm allows obtaining magnetic resolution till 20–30 nm!

Magnetic structure of a hard disk drive (500 GByte) with bit size down to 20–30 nm, which was obtained by MFM01 probe in ambient conditions

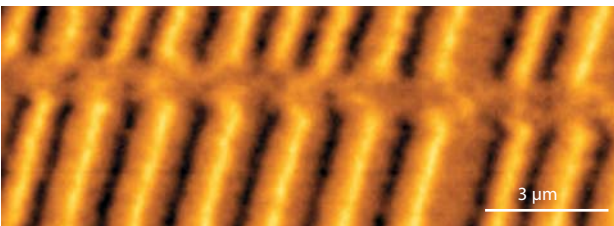
Probe Specification:

- Standard chip size: 1.6×3.4×0.3 mm compatible with the most of commercial AFM devices.
- The base silicon is highly doped to avoid electrostatic charges.
- High reflective Al back side coating.
- Tip side is coated with CoCr magnetic coating with additional layers protecting from oxidation
- Total coating thickness – 30–40 nm*.
- Typical curvature radius of the tip is about 40 nm.
- Guaranteed cantilever lifetime is 1 year if it’s stored at the normal conditions (humidity 30–40%).

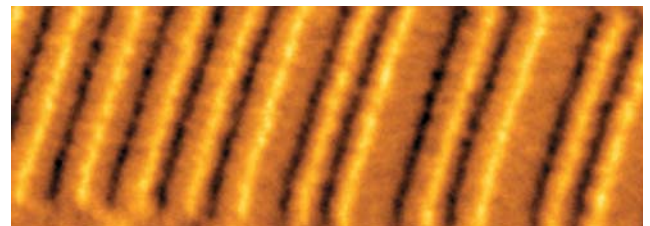
Cantilever series	Cantilever length, L±10 μm	Cantilever width, W±5 μm	Cantilever thickness, T±0.5 μm	Resonant frequency, kHz			Force constant, N/m		
				min	typical	max	min	typical	max
MFM01	225	32	2.5	47	70	90	1	3	5
MFM10	125	30	2.0	87	150	230	1.45	5.1	15.1

* At customer request we can make probes with different coating thickness to achieve different magnetic moments which will be the best for measuring of your samples.

Survival test — 30 days in high humidity conditions! (close to 100% without water condensation)



Magnetic structure of a hard disk drive, which was obtained by MFM01 probe in ambient conditions



Magnetic structure of a hard disk drive obtained by MFM01 probe which was kept in the high humidity conditions within 30 days